Tube Cleaners
Boiler Room and
Steam Specialties

The Lagonda Mfg. Co., Springfield, Ohio.

CATALOGUE D.

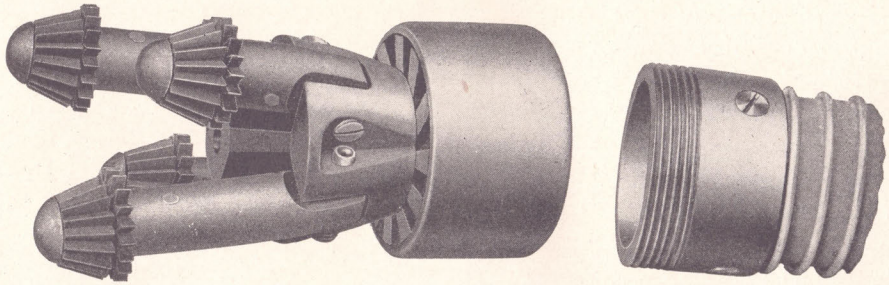
WE ARE PIONEERS IN THE TUBE CLEANER BUSINESS.

OUR Mr. Weinland, the Patentee of our Cleaners, is a practical engineer of more than 20 years' experience. He is undoubtedly the originator of the Water Power or Turbine Cleaners and other mechanical devices for removing scale from the inside of boiler tubes, and in the years past, in which we have been manufacturing them, they have made a record of which we feel justly proud, these machines having been introduced and sold in nearly every country on the face of the earth.

We make a specialty, also, of boiler cleaning service, having every facility for doing contract work in the shortest time and at the least cost, so that we are prepared either to sell machines, rent them, or clean boilers under contract, and will be glad to confer with any one interested, consulting either in person or by letter.

We have acquired by purchase, the good will, and entire Water Tube Boiler Cleaner business of the Gem Mfg. Co., of Pittsburg, and shall add the Gem Impulse and Union Power Cleaners to our own, combining features in all these machines to produce a line of Cleaners more nearly perfect than heretofore, as the patents we now own give us unrestricted liberty in this field, and it is our purpose to use it for the benefit of our customers, improving our machines, perfecting our boiler cleaning service, guaranteeing always the lowest possible prices at which such machines and service can be furnished. We also make a special line of Steam Specialities, such as Tube Cutters, Damper Regulators, Reseating Machines, Automatic Cut-Off Valves, etc., special catalogues of which we will furnish to anyone interested, and will also give detailed information, prices, terms, etc., regarding all these machines.

THE LAGONDA MFG., CO., SPRINGFIELD, OHIO.



NO. 6 CLEANER FOR CURVED TUBES.

CLEANER FOR CURVED BOILER TUBES

Cut on page 2 shows our Improved No. 6 Special Strength Cleaner, made for 3¼ inch curved tubes outside diameter. (We make Cleaners for curved tubes of all sizes.) The No. 6 is equipped as shown with cone and star cutters on all the arms, but this may be changed to suit any conditions of work, using all star cutters on two arms and cone cutters on the other two, but when thus equipped the cone cutters **must be on the long arms** and star cutters on the short arms.

It can also be equipped with either style head shown on page 14 with or without toggle joint as condition may require.

This machine is furnished with our specially made Ball Bearings and high duty balls, but if customer desires, can be equipped with phosphor bronze cone bearings, shown on page 11.

Our special coupling for attaching hose is of greatest value on this machine, there being no clamps or obstructions to prevent the machine from passing freely around the curve of tubes. It is shown in cut attached to hose, ready to connect to the cleaner.

The machine is operated by water under suitable pressure (150 pounds or more if convenient, but less will answer under many conditions) through hose (1½ inches is recommended) but smaller can be used. See page 40 for description of hose.

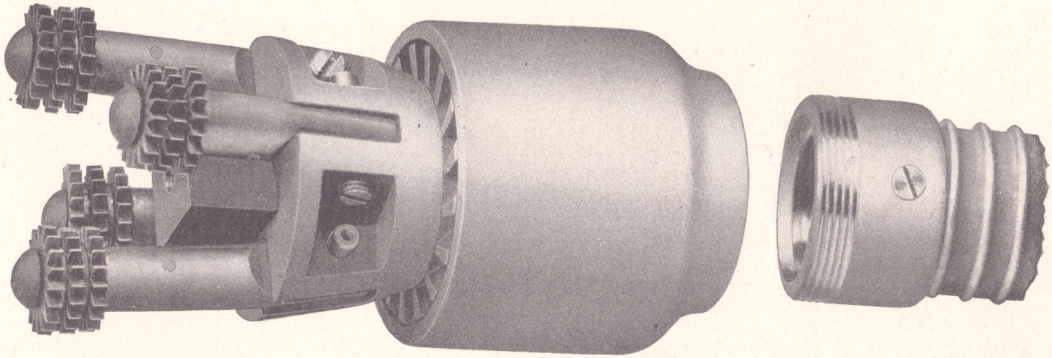
The parts, page 12, are used in this machine, each one being separate, for easy and cheap duplication when necessary and cut page 10 shows the internal arrangement. This cut and all of the above description answers also for machines of this type for all sizes of curved tubes.

Liberal supply of extras furnished with this machine, and price furnished on application.

All Cleaners sent on approval.

See page 40 for operating hose.

NORTHERN SALES OFFICE
The Lagonda Mfg. Co.
527 Nasby Bldg., TOLEDO, O.



No. 7½ WEINLAND IMPROVED WATER POWER CLEANER FOR 3½-INCH TUBES.

No. 8 WEINLAND IMPROVED WATER POWER CLEANER FOR 4-INCH TUBES.

Can be furnished with either Ball Bearings or Cone Bearings, as shown in cuts page 10 and 11.

No. 7½ AND 8 CLEANERS FOR STRAIGHT TUBES

The cut on page 4 represents our No. 7½ and No. 8 Cleaners, the two being exactly alike, except as to size, the No. 7½ being intended for 3½-inch tubes, the No. 8 for 4-inch tubes.

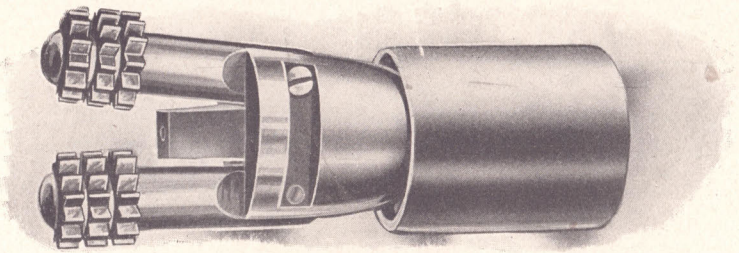
These are our Standard Machines which we have made for years, and large numbers of them are in successful use in our own and foreign countries.

The sectional cut on page 10 shows the internal arrangement of these machines, and the cuts on page 12 show the different parts. In making these machines, we use the greatest care, as we do in all our machines, in selecting material, tempering and finishing the wearing parts, especially the ball-bearings, which are ground to as nearly a perfect bearing as possible, and we use extra high duty steel balls so that these machines run with the least possible friction, although, where customers prefer we can furnish the phosphor Bronze bearing shown in the cut on page 11.

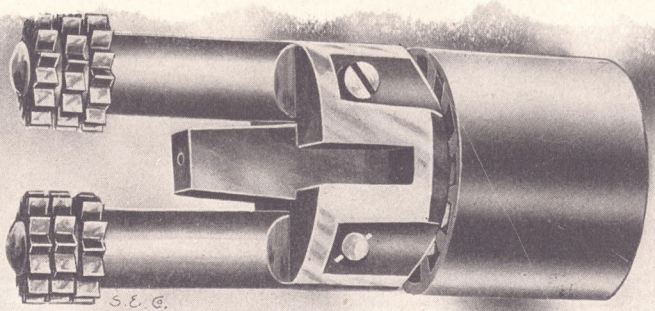
These machines can be equipped with either of the special Heads shown on page 14, and with a Toggle Joint if this is desired, but unless otherwise instructed, we furnish them either with Standard Head as shown in the cut, that is, with the four arms and cutter wheels, or with our Rocker Arm Head, page 14, where in our judgment this may seem better.

Our special hose coupling is used with these machines and water under 150 lbs. pressure is recommended, or more if convenient, but less will answer in many cases. We also recommend 1½-inch hose, but smaller can be used if desired.

See page 40 for operating hose.



No. 9 AND 9½ WEINLAND TURBINE CLEANERS.



No. 10 AND 10½ WEINLAND TURBINE CLEANERS.

CLEANERS FOR ALL SIZES OF SMALL TUBES.

Cuts on page 6 show our Small Cleaners, made for locomotive and marine boilers, condenser and evaporator tubes for any purpose.

They are made on same plan as Improved Cleaners Nos. 6, 7½, 8 and 14 only smaller using two instead of four arms.

Can be furnished with either special bearings and high duty balls or cone bearings, as customer may prefer.

We guarantee them fully, and they are strong and well made, and marvels of power, considering their size.

We have sold great numbers to our own and foreign governments for their many vessels.

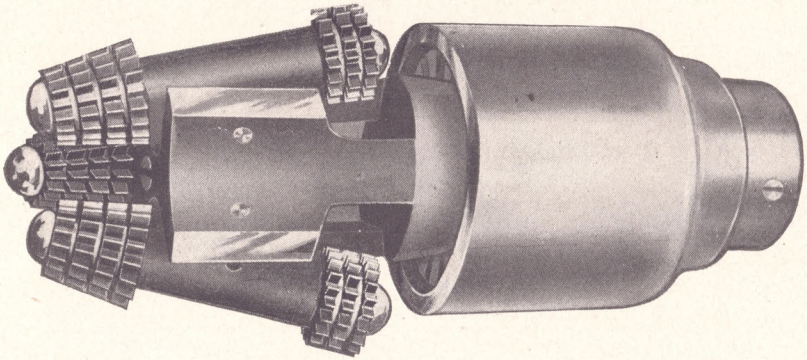
They are made in the following sizes:

The No. 9 is 1½-inch outside diameter for tubes 2-inch outside diameter.
The No. 9½ is 1¾-inch outside diameter for tubes 2¼-inch outside diameter.
The No. 10 is 2-inch outside diameter for tubes 2½-inch outside diameter.
The No. 10½ is 2¼-inch outside diameter, for tubes 2¾-inch outside diameter.

Always when ordering, specify size of tube for which machine is wanted. Prices given on application.

See page 40 for operating hose.

NORTHERN SALES OFFICE
The Lagonda Manufacturing Co.
F. S. DAVIDSON, Mgr.



No. 14 TUBE CLEANER FOR 4-INCH TUBES.

No. 14 EXTRA HEAVY CLEANER FOR 4-INCH TUBES

On page 8, we show our No. 14 Cleaner. This machine is built for all styles of four inch straight tubes, and is made exceedingly strong and powerful to remove all ordinary cases of scale.

The three arm rocker arm head as shown in the cut, consists of three arms, which move freely in and out of slots, and each independent of the other so they can adjust themselves to all conditions of scale. We use a special steel cone cutter on the front part of the arm and thick star cutters on the back, each having extra heavy pins.

We also furnish with this machine a spider and arms as shown on No. 8 cleaner, page 4. The arms are made extra heavy and we use special steel cone cutters on both long and short arms with extra heavy pins.

We make this machine with either cone or ball bearings, which are tempered and ground to the highest degree of perfection.

The parts are few, strong and durable. These facts make this machine the most effecient "TURBINE" on the market today.

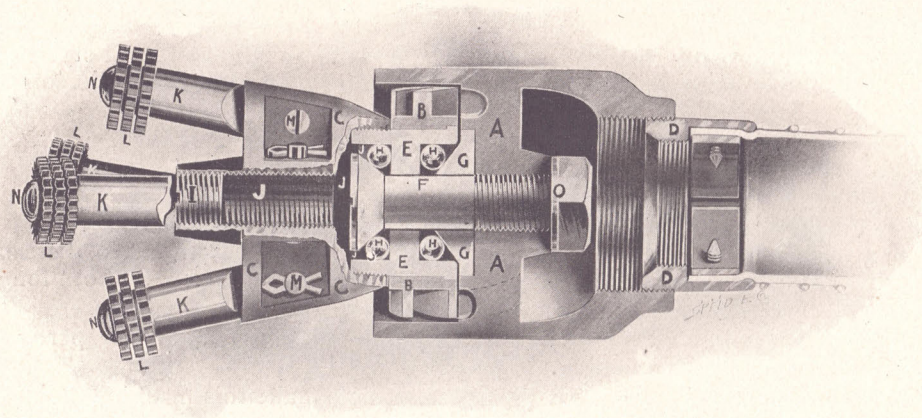
Any of the cleaner heads shown on page 14 can be used on this Cleaner either with or without toggle joint as may seem best.

The sectional view page 10 shows the internal arrangements of this machine, each part being also separately shown on page 12.

This machine is operated by water under suitable pressure (150 pounds or more if convenient, but less will answer under many conditions) through hose (1½-inch is recommended but smaller can be used if desired.)

(See page 40 for description of hose.)

See page 12 for Cuts of parts.

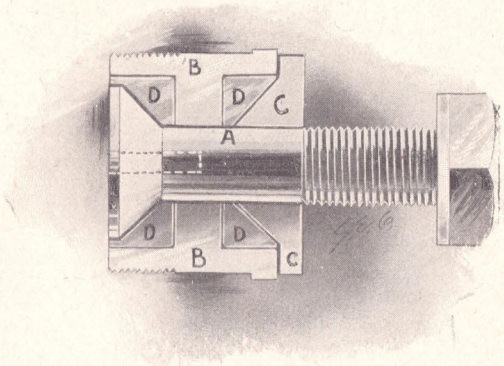


A—Case.
B—Water Wheel.
C—Spider.
D—Hose Coupling.
E—Bushing.
F—Center Bolt.
G—Cone.
H—Balls.
I—Screw for Oil Chamber.
J—Oil Chamber.
K—Arms.
L—Cutter Wheels.
M—Arm Screws.
N—Cutter Pins.
O—Nut for Center Bolt.

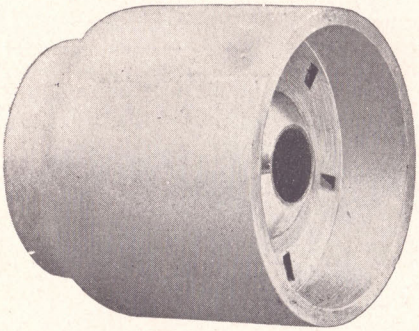
See page 12 for Cuts of parts.

CONE OR THRUST BEARING.

The cut herewith shows a Cone bearing which can be substituted for the Ball bearings in any of our No. 6, 7½, 8 and 14 Cleaners. We believe that Ball Bearings run with least friction and ours have remarkable strength and durability, but some of our customers have expressed a preference for Cone bearings, and where this is the case they can be furnished. Comparing this cut with sectional cut of Cleaner page 10, it will readily be seen that either can be used.



A—Center Bolt Cone Bearing Head.
B—Bushing Threaded.
C—Cone.
D—Cone Bearings.



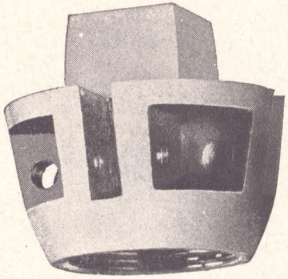
No. 1.

No. 7.

No. 5.

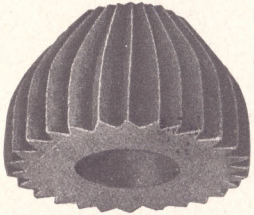
No. 11.

No. 9.

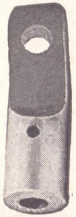


No. 3.

No. 6.



No. 14.



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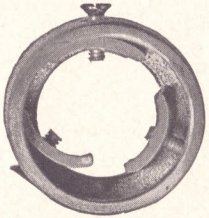
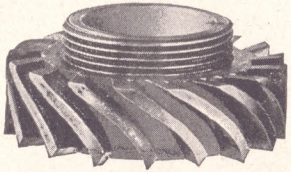
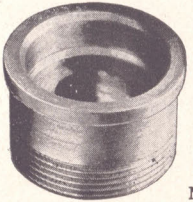


No. 13.

No. 12.



No. 2.



No. 4.

No. 10.

PARTS OF WEINLAND IMPROVED WATER POWER CLEANERS.

DESCRIPTION OF PARTS ON PAGE 12.

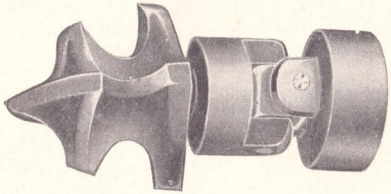
See above in Complete Machine, page 10. Compare Number and Style of Parts in Weinland Cleaners with those of other makes.

No. 1. Phosphor Bronze Case with Steel Cone.
No. 2. Water Wheel with Steel Bushing.
No. 3. Spider to which Arms are attached.
No. 4. Bushing of Hardest Steel for Ball Bearings, carefully tempered and ground to perfect bearing.
No. 5. Cone of Best Steel, Specially Hardened and carefully ground.
No. 6. Shaft or Main Bolt with Ball Bearing Head Specially Hardened and carefully ground.
No. 7. Long Arm (Steel) to which Cutters are attached.
No. 8. Short Arm (Steel) to which Cutters are attached.
No. 9. Arm Screw.
No. 10. Pins for holding Cutter Wheels on Arms.
No. 11. Steel Cutters $\frac{5}{32}$ in. thick milled from solid blanks. Used on Nos. 1, 2, 6, 7½, 8 and 14 Cleaners. Smaller ones same style used on Nos. 9 and 10.
No. 12. Hard Iron Small Cone Cutter. Used on Nos. 1, 2 and 6 Cleaner.
No. 13. Coupling for Hose, showing Clamps for holding same. This is attached to and furnished with all Cleaners.
No. 14. Hard Iron Large Cone Cutter. $1\frac{11}{16}$ in. used on No. 8 Cleaner. $1\frac{5}{16}$ in. used on Nos. 1 and 2, 1½ in. on No. 7½ Cleaner.

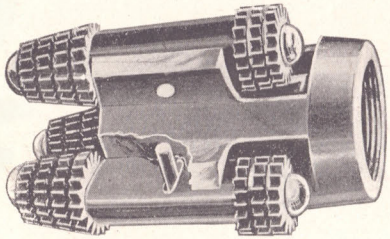
These Parts used on Nos. 6, 7½, 8 and 14 Improved Cleaners.

We furnish with every machine a liberal supply of above extra parts of different styles, viz: Star Cutters No. 11; small Cone Cutters No. 12; large Cone Cuters No. 14; also extra arms, No. 7; pins, No. 10, parts that are liable to wear.

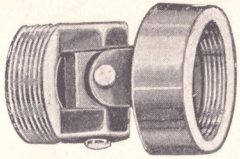
THE LAGONDA MFG. CO., SPRINGFIELD, OHIO.



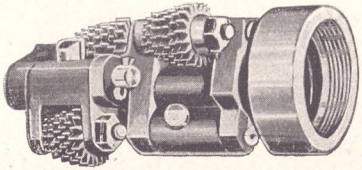
PORCUPINE HEAD.



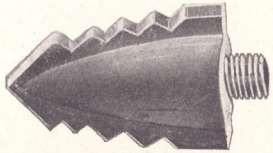
THREE ARM ROCKER ARM HEAD



TOGGLE JOINT.



GEM HEAD.



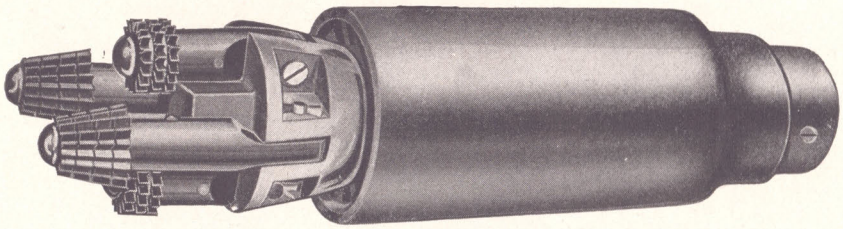
DRILL HEAD.

DIFFERENT TYPES of CLEANER HEADS USED WITH WEINLAND CLEANERS.

The cuts on page 14 show different types of Cleaner Heads, each of which has been found to be suited to certain conditions of scale, which experience has taught us, are hardly the same in any two cases, so we make these several types, any of which can be furnished with Cleaner, either with or without Toggle Joint, which is shown in the center.

In thin hard scale, our Standard Head shown on, page 4; our Three Arm Rocker Arm Head shown on No. 14 Cleaner, page 8, or our Gem Head can be most successfully used in great majority of cases. In heavy scale our Porcupine Head with toggle joint is better and often does faster work.

In ordering, customers should give us all their conditions as far as possible, and we will equip Cleaner to most nearly suit conditions as well as we can determine, but changes can be made at any time, if after full understanding of the details, conditions, etc., this seems advisable, as all these Heads can be used on any of our No. 6, 7½, 8, 14 and 16 Cleaners, either with or without the Toggle Joint, but unless specified with the order, we will send Cleaners with either the Standard or the Three Arm Rocker Arm Head, as in our judgment, may seem best.



No. 16 CLEANER FOR 4-INCH STRAIGHT TUBES.
No. 17 CLEANER FOR 3½-INCH STRAIGHT TUBES.
No. 18 CLEANER FOR 3-INCH and 3¼-INCH CURVED TUBES.

No. 16 THRUST BEARING CLEANER FOR 4″ TUBES.

The No. 16 Cleaner shown on opposite page is our latest type of Turbine Cleaner. It has a thrust bearing instead of balls. It is the strongest and most effective non-ball bearing Cleaner in use today. It has fewer parts than any other Cleaner made; has only two bearings which are made of the best tool steel, hardened and ground to perfection.

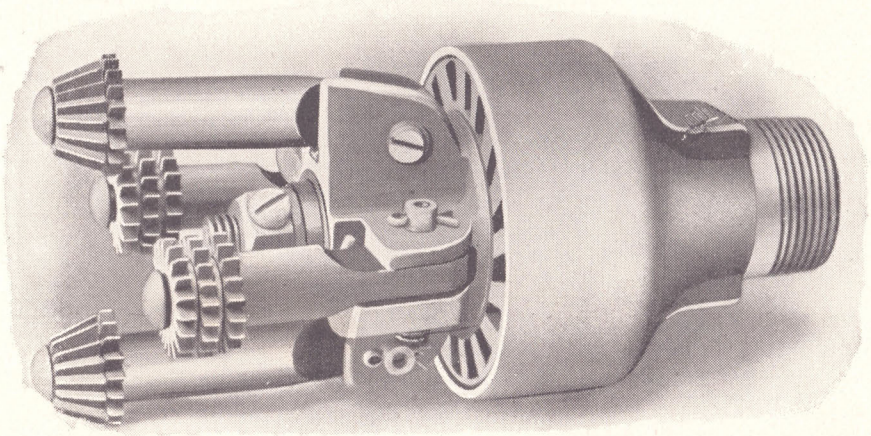
The water-wheel is screwed onto the center bolt on the front end, **where the power is needed.** All the Heads and cutting tools shown on page 14, on our regular spider and arms as shown in cut, are adapted to this machine. With every machine sent out, we send both the Head shown here and our Three Arm Rocker Arm Head. We build these machines for all sizes of straight and curved tubes.

Our No. 17 Cleaner is for 3½-inch straight tubes.

Our No. 18 Cleaner is for 3-inch and 3¼-inch curved tubes.

We gladly send any of these Cleaners subject to approval.

We recommend a water pressure of not less than 150 lbs. for all our Thrust Bearing Machines.



No. 1 WEINLAND WATER POWER CLEANER FOR 4-INCH TUBES.

No. 2 WEINLAND WATER POWER CLEANER FOR 3½-INCH TUBES.

CLEANERS FOR STRAIGHT TUBES.

The Nos. 1 and 2 Water Power Cleaners, shown on opposite page, we have been making for many years, and large numbers are in successful use in this and other countries. We believe they are more effective, more durable, and stronger than any similar Cleaner of any other make. But we do not think them equal to our Improved Nos. 7½, 8 and 14 Cleaners, and we can sell them a little cheaper than the others, as it costs less to make them. They are not inferior Cleaners in any sense, but merely lack some of the special features used on the other machines: but we claim the Nos. 1 and 2 are superior to any other Cleaners on the market. The Nos. 1 and 2 have **phosphor bronze case and water wheel,** exceedingly tough to withstand strain and wear. **All other parts,** Cutter Wheels, Arms, Screws, Pins, Balls and Bearings, are made especially from best steel, carefully hardened. Machines run with little friction, and we guarantee them fully.

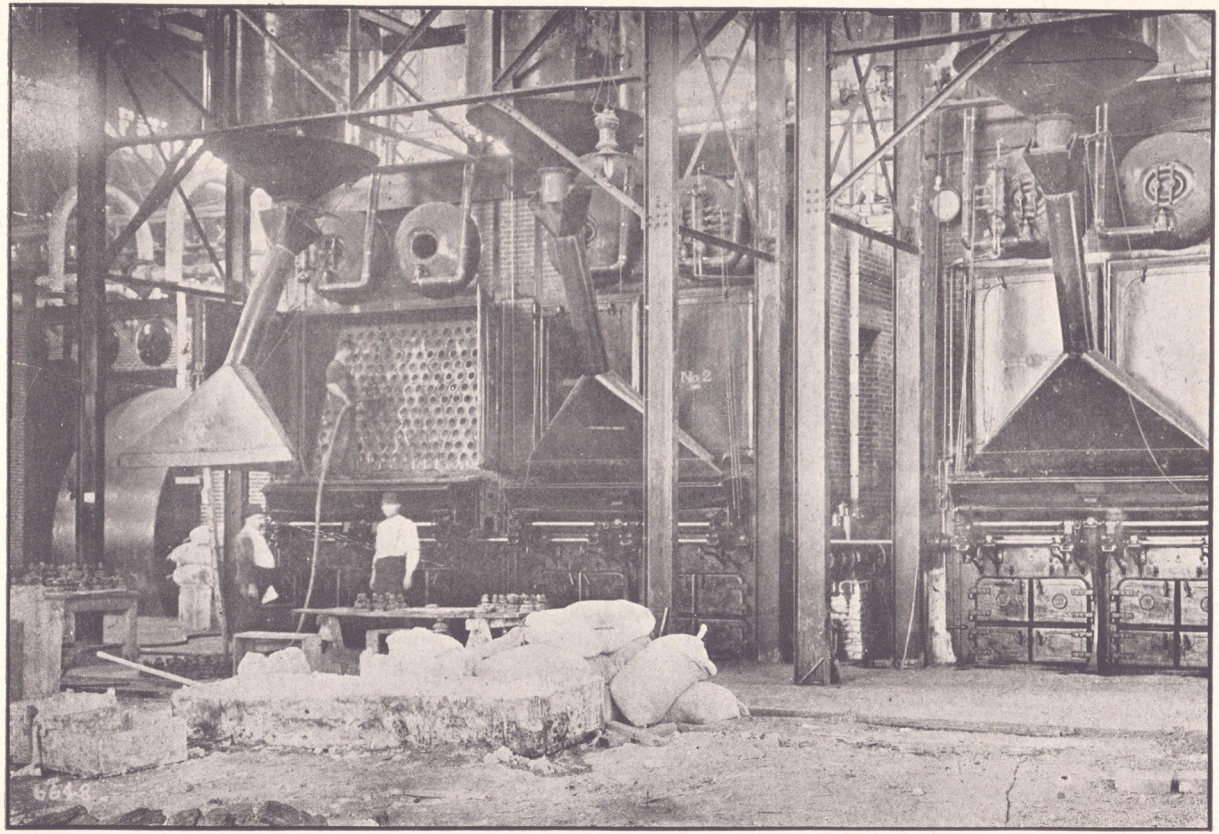
We use the greatest care at every point to produce the very best machine of the kind, and experience and actual tests with others, prove them to be more efficient and durable.

The Weinland was the first Water Power Cleaner ever put to actual practical use.

Price made on application, and all Cleaners furnished with liberal supply of extra parts, and sent on approval.

See page 40 for operating hose.

THE LAGONDA MFG. CO., SPRINGFIELD, OHIO.



CLEANING BABCOCK & WILCOX BOILERS AT ST. LOUIS EXPOSITION WITH WEINLAND NO. 8 CLEANER.

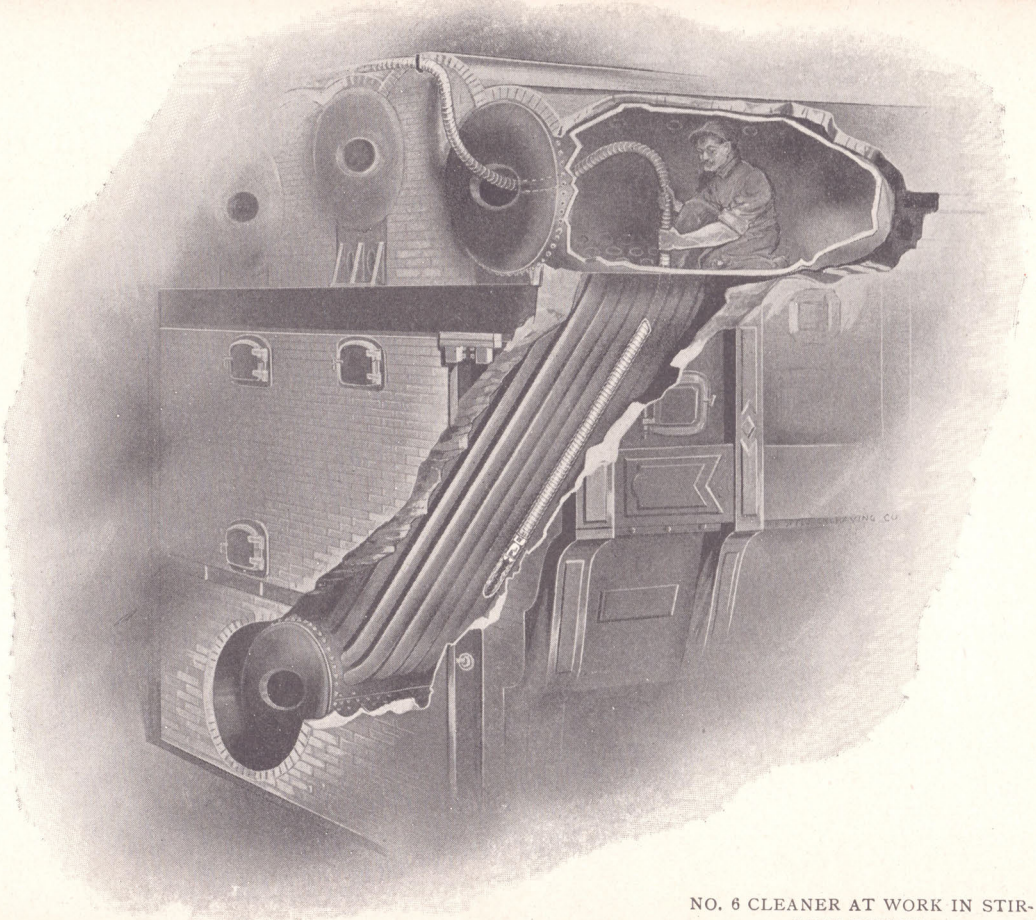
WEINLAND CLEANERS ADAPTED TO HORIZONTAL BOILER TUBES.

On page 20, we show a cut made from a photograph of our No. 8 Cleaner at work in Babcock & Wilcox Boilers, at the World's Fair or St. Louis Exposition. Our machines were purchased by the Managers of this Exposition, and used exclusively, in cleaning the several types of boilers in that plant.

This shows the manner of operating the machine in boilers having horizontal tubes of which there are a number of well-known makes such as the Heine, the Erie, the Atlas, the National, the Standard, the Aultman & Taylor, the Edge Moor, the Caldwell, the Zell, the Keller, the Root, etc. In fact this type of Cleaner is suitable for all styles of boilers having straight horizontal tubes. It is shown on page 4 with cut of parts on page 2 and we would call especial attention of any prospective buyer to this illustration of parts.

Please notice how few there are, how strong and compact each one is made.

Compare the Weinland in this particular with others and note its marked superiority.



NO. 6 CLEANER AT WORK IN STIRLING BOILER.

DESCRIPTION OF CLEANER IN BOILER WITH CURVED TUBES.

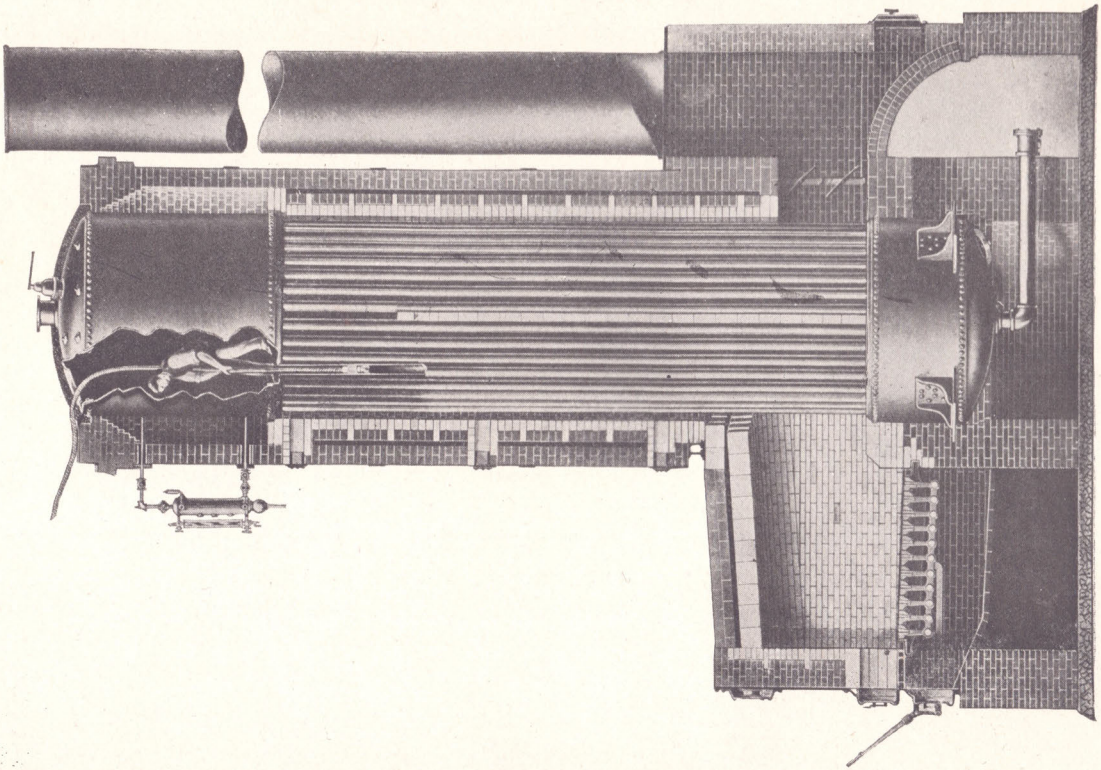
On page 22, we show one of our Cleaners at work in the front drum and bank of tubes of Stirling Boilers. This shows the way in which the Cleaner is taken into the drum, and the way the Operator manipulates the hose.

Our No. 6 and 18 Cleaners, pages 2 and 16, are the styles of machines used in this particular type of boiler, and are so constructed that they will readily go around the bends in the tubes. In fact, they are entirely suited for work in tubes with even shorter bends than are found in the tubes of this particular type of boiler.

This however, will serve as a good illustration of the manner of handling the machine in boilers using curved tubes. We have sold large numbers of these machines for boilers of this make, having had most flattering reports from parties who had used other types of Cleaners which claim to have been made especially for these boilers. The value of our special hose Coupling is notably seen here, as being entirely free from any outside obstruction there is nothing to obstruct or cause hose to lodge in bends of tubes as with some Cleaners.

This particular size, the No. 6, is shown and fully described, pages 2 and 3, the parts for same being shown on page 12 and we call especial attention of any prospective buyer to this illustration of parts.

Please notice how few there are, how strong and compact each one is made. Compare these with others and note the marked Weinland superiority. This machine is suited to all types of boilers having curved tubes.



NO. 8 CLEANER AT WORK IN A WICKES BOILER.

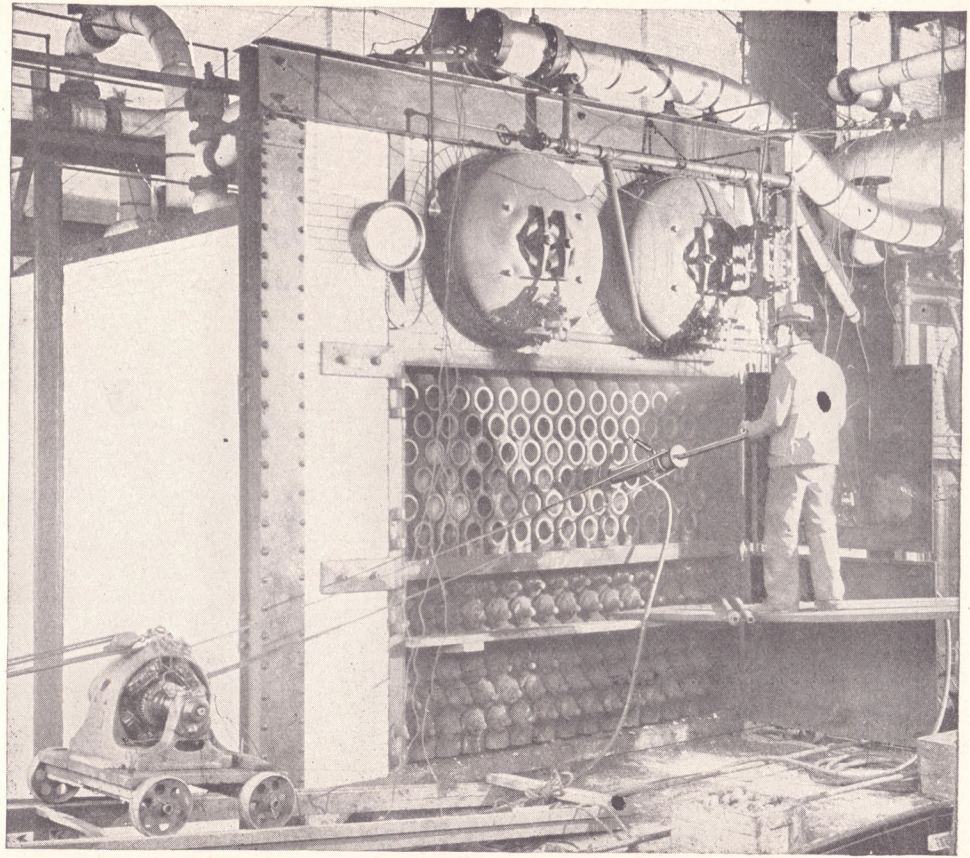
WEINLAND CLEANERS ADAPTED TO VERTICAL BOILER TUBES.

On page 24, will be found an illustration of our No. 8 Cleaner at work in a Wickes Boiler, the tubes of which are in a vertical position. This shows the manner in which the machine is operated in this type of boiler, prominent among which are also the Cahall and the Cook. The machine however, is well adapted to all such boilers with straight vertical tubes and for all sizes of tubes.

This particular machine is shown on page 4 of this catalogue, the parts for same being shown on page 12 and we would call special attention of any prospective buyer to this illustration of parts.

Please notice how few there are, how strong and compact each one is made.

Compare the Weinland in this particular with others and note its marked superiority.



THE WEINLAND MECHANICAL TUBE CLEANER AT WORK IN BABCOCK & WILCOX BOILERS.

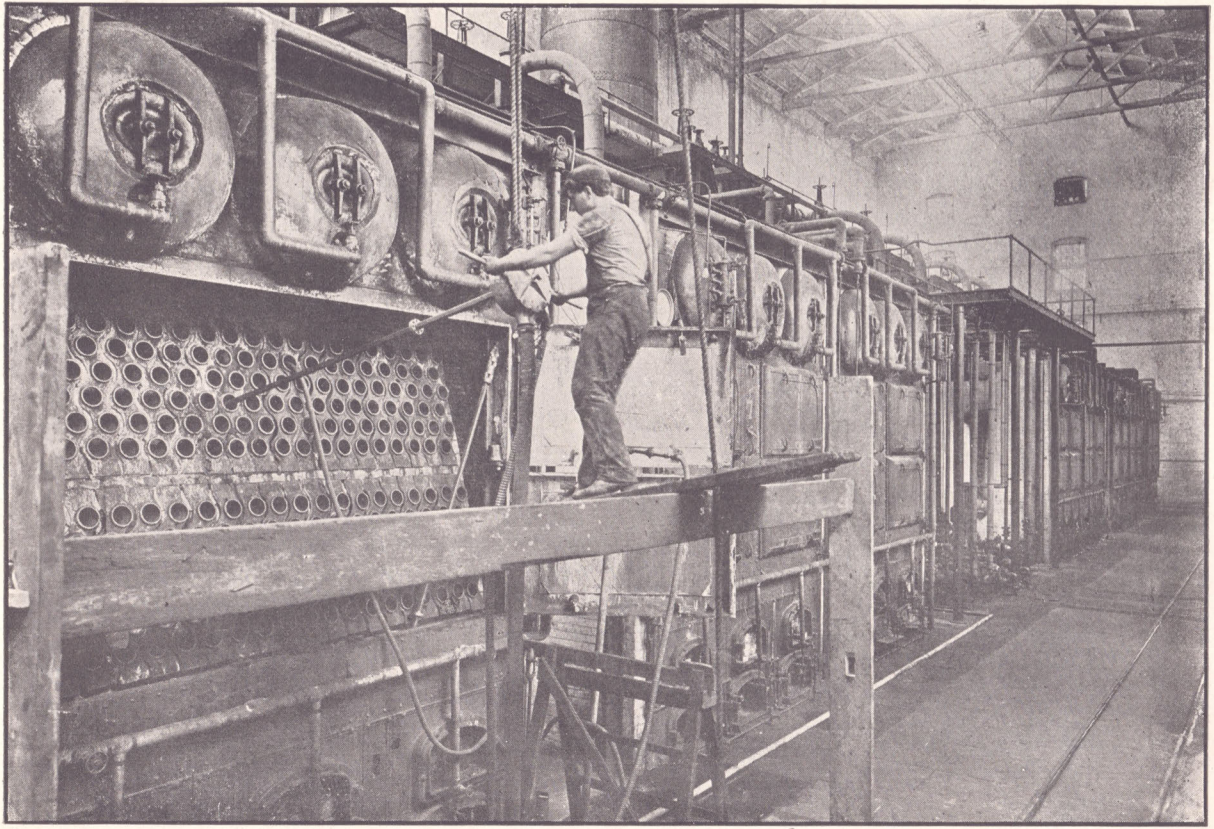
THE WEINLAND MECHANICAL TUBE CLEANER

Is a valuable Cleaner for large plants where cleaning is almost a constant operation, or where scale is extremely thick and hard so that it cannot be removed by a hand or turbine Cleaner. It is also most economical in any plant where water is scare or expensive. With this machine we can remove the heaviest scale, and have used it successfully in tubes that were entirely closed. It is the exception, though, to find such conditions, and the Water Power Cleaners answer in the great majority of cases; but where they fail we will sell our Mechanical Cleaner or are prepared to clean Boilers by contract, having a force of expert operators for this purpose, or we will rent machines, should customers prefer.

If interested, please write us for special catalogue and particulars about this machine and its work. Most of the largest steam users in this country are using this Cleaner. Considering capacity of work, and durability, we think it the most economical Cleaner made.

The cut on opposite page shows the way it is done at Edison Electric Light Company, Columbus, Ohio. They have 2500-H. P. B. & W. Boilers, and with our Mechanical Cleaner and 5-Horse Power Electric Motor clean 18-feet 4-inch tubes in 3 to 6 minutes, removing every particle of scale, leaving tubes clean and bright as when new.

This and another type of Power Cleaner (our Direct Motor) is more fully described and illustrated in special catalogue giving full description and numerous illustrations. We will gladly send this catalogue, quote prices, etc., to anyone interested.



DIRECT MOTOR CLEANER IN BABCCCK & WILCOX BOILER, SAN FRANCISCO, CAL.

THE WEINLAND DIRECT MOTOR TUBE CLEANER.

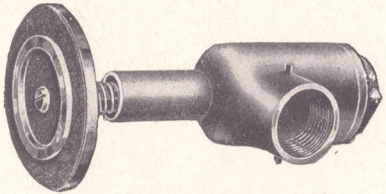
Is shown in cut on page 28 in operation in B. & W. Boilers at the California Gas & Electric Co.'s Plant, in San Francisco, Cal. A 12-inch Water Motor is used for furnishing the power for driving the shaft and cleaning head of this machine. These parts being much the same as those used in our Mechanical Cleaner shown and described on pages 26 and 27. The water for operating this motor, is furnished by 1½-inch hose, the discharge water being carried away through a 2½-inch hose furnished for that purpose. Both the operative and discharge hose can be readily located in the cut.

This is an excellent and most practical device for cleaning tubes in cases where more power is required than can be developed with the ordinary Turbine Machine, as with this machine we can develope from three to four horse-power, and on that account, of course, it is in many cases a much more desirable machine than the ordinary Turbine.

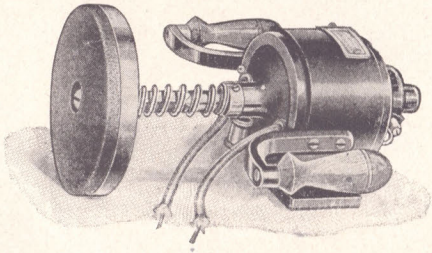
In our illustrated book, catalogue A, we devote several pages to a full description of this machine and show cuts of it in operation at several different plants. This book will be promptly furnished to any one wishing to investigate further this type of machine, prices, terms, etc., (see page 40 for style of operating hose.)

We often rent this machine or use it in doing contract work which is a special feature with us.

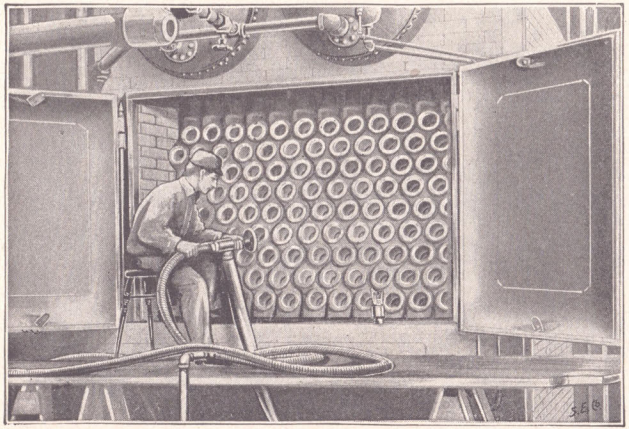
LAGONDA RESEATING MACHINE.



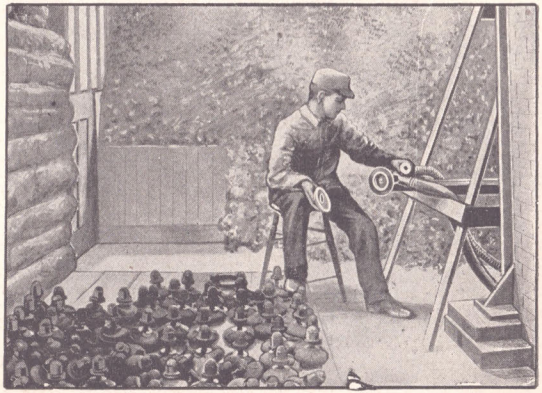
WATER MOTER RESEATER.



ELECTRIC RESEATER.



AT WORK ON HEADER FACES.



AT WORK ON CAPS AND NUTS.

LAGONDA RESEATING MACHINE

Our Reseating Machine, shown on page 30, is intended for cleaning Nuts, Caps and Header Faces.

It is composed of a flat emery stone ¾-inch thick and 6¾ inches in diameter, securely held in a cast-iron plate. This wheel is connected to a Turbine Water Wheel or Electric Motor which is driven by water under, say 75 pounds pressure or suitable electric current. (See page 40 for operating hose.) This rapidly revolves the emery wheel handled by an operator. A touch of the wheel to the Header Face, Cap or Nut cleans them, doing the work rapidly and thoroughly, so that refitting or recleaning is unnecessary, as is so often required where work is done by hand.

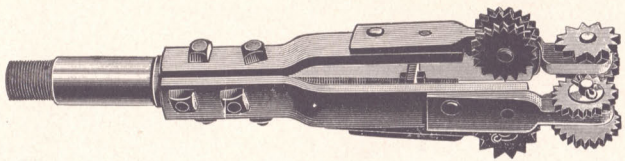
The illustrations on page 30 show exactly how the work is done.

It is a great time-saver. In our work we easily clean the caps, nuts and faces of the 108 tubes in a B. & W. Boiler in 55 minutes, and the work is then perfectly done, as the scale and dirt is not only all removed, but the parts are nicely polished so that nuts and caps can be quickly and accurately replaced; a result that is never accomplished with the old tedious plan of chisel scraper and hand work.

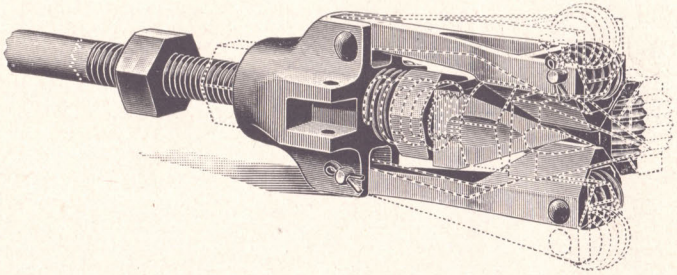
Each Water Motor machine is furnished with suitable length of hose for carrying off water used in driving the machine.

The Electric machine shown on opposite page, is a very efficient motor, which develops one-sixth to one-fourth horse power. Is light and easily handled, being connected to any lamp socket. Is furnished in 110 or 220 volts, D. C., or A. C. currents.

Send for special Catalogue, prices, etc.



FOUR-PRONG HAND CLEANER, MADE FOR ALL SIZES.
STRAIGHT TUBES, 1 TO 6 INCHES DIAMETER.



JAMMER" HAND CLEANER, FOR 4-INCH TUBES ONLY

NORTHERN SALES OFFICE
The Laconda Mfg. Co.
527 Nasby Bldg., TOLEDO, O.

OUR "JAMMER" AND FOUR-PRONG HAND CLEANERS.

Are the only entirely practical and successful hand machines ever produced. They will remove any scale that Water Power Cleaner will handle; but being operated by hand, require more men and take longer time, but cost less to start with. In many instances, where scale is too heavy and hard for any Water Power Cleaner, it can be removed with these. They are standard machines, entirely practical for straight tubes. We have made them for years, thousands are in use, and we fully guarantee them.

The "Four-Prong" is suitable for thin and medium scale. The sharp-toothed hard steel cutters are attached to strong, stiff steel springs which hold the cutter wheels firmly against the scale as the machine is vigorously worked back and forth, and the scale is effectually cut and shattered.

We make this machine for straight tubes only, from 1 inch to 6 inches in diameter.

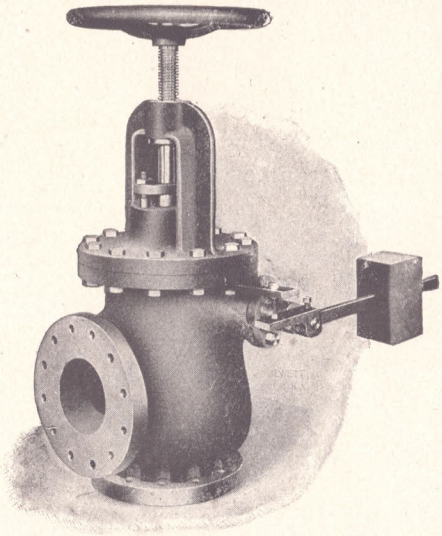
We guarantee all our machines.

Price of Four-Prong.....$12.00

The "Jammer," we think, is best for heavy scale. The jaws of the machine with cutters attached are forced forward and against the scale by heavy repeated blows which successfully loosen and remove it. Made only for 4-inch straight tubes.

Price of Jammer.....$12.00

THE LAGONDA AUTOMATIC CUT-OFF VALVE.



AUTOMATIC CUT-OFF VALVE.

The Lagonda Automatic Cut-off Valve is placed in the connection between the boiler and the steam header. If the header bursts it instantly shuts off all the boilers. If a boiler tube fails in any boiler it shuts that boiler off from the steam header and localizes the trouble, while the remaining boilers go on supplying steam to the engines as usual.

THE LAGONDA AUTOMATIC CUT-OFF VALVE.

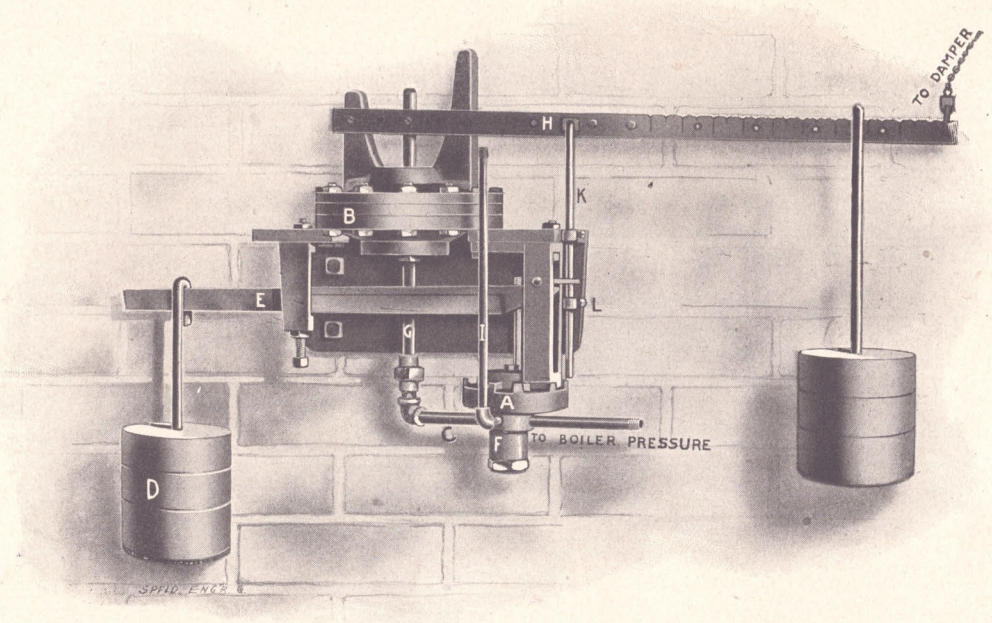
It works instantly either way and does not depend upon differences in pressure for its action, but upon the actual flow of steam. There are no pistons or pilot valves to corrode or stick, but only two moving parts, the valve proper and the balancing lever. The latter is in plain sight and can be moved up and down by hand while the boiler is in operation.

The valve may be set for any maximum output desired. It prevents reversed flow of the steam altogether and when shutting down a boiler no attention to the valve is necessary, for as soon as the pressure is reduced the valve closes and remains closed until steam is raised again, when it automatically opens.

The valve may be used to replace the ordinary stop-valve, since by screwing down the hand-wheel it virtually acts as one. The Lagonda Automatic Cut-Off Valve should not be confused with "non-return" valves, one or two of which have been placed upon the market, since the Lagonda valve acts both ways, in case of accident on either side. If something should happen to the steam piping beyond the valve, a "non-return" valve would do no good, while Lagonda valves would protect the inmates of the engine or fire room by shutting off the boilers.

Such a valve is essential to the safety of the men about a power plant and to the regular and uninterrupted operation of the plant itself. The Lagonda valve has been in actual service three years and has been thoroughly tried out. In the first plant where we put one in, a blind flange blew off a steam-header soon after, due to carelessness in not bolting it up thoroughly, but the vale preventel any trouble from escaping steam.

We would be glad to send one of these valves on trial to any owner of a boiler plant. If it does not do all we claim for it, you keep your money.



THE LAGONDA DAMPER REGULATOR.

THE LAGONDA DAMPER REGULATOR

THE accompanying cut page 36 shows the Lagonda Damper Regulator for regulating or controlling the Damper in Smoke Stack of Steam Plants. It can also be used to regulate the speed of Draft Fans and other similar purposes.

It is an automatic mechanical device which must recommend itself to every engineer, steam maker or user.

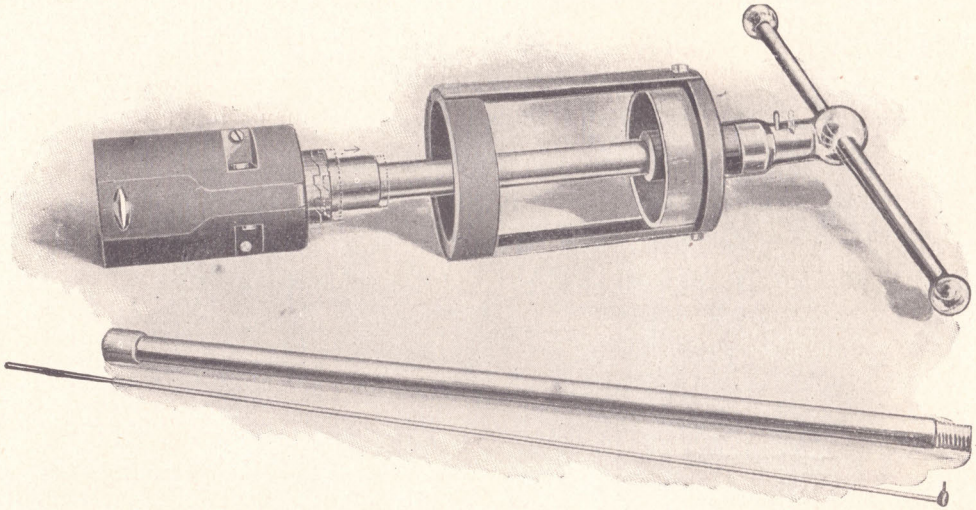
IT'S SIMPLE, having the fewest parts, none of them complicated, all easily understood and therefore easily and quickly installed for service.

IT'S REMARKABLY DURABLE, there being only one part where wear can occur, namely, the diaphragms, and these are protected by our patented armor which prevents kinking or rotting, so common to diaphragms. **THERE ARE NO PISTON RODS TO WEAR OR STUFFING BOXES TO LEAK.**

IT'S THOROUGHLY RELIABLE, being connected directly to the boiler pressure; the slightest variation of steam causes it to act.

With this device the steam can automatically be maintained at any given point which makes a great saving of coal and insures greatest safety in operating steam plants.

We have special printed matter more fully describing this device which we will be glad to send to any one interested.



THE LAGONDA TUBE CUTTER FOR ALL SIZES OF TUBES.

THE LAGONDA TUBE CUTTER.

Should be in every Boiler Room and in the hands of every operator of a Portable or Traction Engine.

It Is a Simple, Inexpensive Tool, which is easily operated and does its works rapidly and thoroughly.

It Will Cut Tubes in Any Style of Boiler and at any point of the tube, and is made in different sizes for all sizes of tubes.

One Man Can Easily Operate It, or if desired to make extra speed, two men can operate it at the same time.

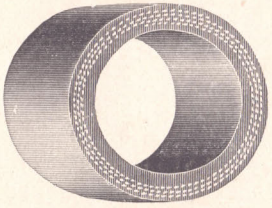
It Saves Time and Cost of Sending for a Boiler Maker when for any reason it becomes necessary to cut out a tube, as any man about the place can do the work as quickly and easily as the boiler maker himself. We have seen this tool cut off a 4-inch tube in 55 seconds.

With the Extension Shaft shown in Cut machine can be arranged to cut at any point inside a tube and the cut tube can be removed through the manifold or tube sheet. Perfectly adapted for both Water Tube and Fire Tube Boilers. If further information is wanted let us send you our 6 page special Catalogue devoted especially to this machine.

GEO. H. GIBSON CO. PARK ROW NEW YORK

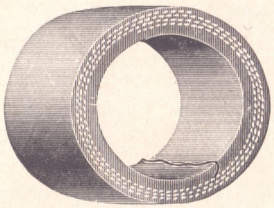
Good Hose is of the greatest importance in the successful operation of Tube Cleaners. Knowing this we have made arrangements with one of the largest manufacturers of Hose in this country to make for us a special grade suited exactly to this particular work. It has a seamless tube which makes it greatly superior to the ordinary hose which has the lapped seam tube. The cuts here show exactly the situation.

Seamless Tube. **Our Method.**



Water Cannot Penetrate the Duck.

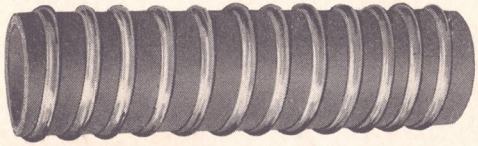
Lapped Seam Tube. **Old Method.**



Seams Open and Duck is Rotted.

We can furnish this grade of hose in any size, but except for smallest Cleaners we recommend 1½-inch which we can furnish wound with flat wire coupled at both ends at 50c net per foot. We carry 25, 30 and 50 foot lengths in stock, but can furnish any desired lengths on short notice.

If you need hose we hope you'll get this grade. It is guaranteed to stand high pressure. You can of course, get a cheaper hose, but you cannot anywhere else get so good an article at so low a price.



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